

## CLAIMS

1. A probe for use in measuring apparatus comprising:  
a housing;  
5 a member movable with respect to the housing onto which a stylus may be mounted such that movement of the stylus results in movement of the member;  
a first transducer for measuring movement of the member relative to the housing;  
10 a second transducer which measures one of a property of the probe or a relationship between the probe and an adjacent surface;  
wherein the member may be located in a defined rest position with respect to the housing;  
15 and wherein when the member is located in this defined rest position, the first transducer is locked but the second transducer is not locked.
2. A probe according to claim 1 in which the member  
20 and the housing or a body connected to the housing are each provided with complementary location elements whereby the member or body may be biased or driven to a position where the member is held in a defined rest position with respect to the housing, said defined rest  
25 position being defined by the location elements.
3. A probe according to claim 2 wherein one of the member or the body may be biased or driven along a single axis to a position where the member is held in  
30 the defined rest position with respect to the housing about at least two axes.
4. A probe according to any of claims 1-3 wherein the second transducer produces a touch trigger signal.

5. A probe according to any of claims 1-3 wherein the second transducer measures the range of movement of the member relative to the housing.

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6. A probe according to any of claims 1-3 wherein the second transducer is a non-contact transducer.

7. A probe according to any of claims 1-6 wherein  
10 when the member is located in its defined rest position, its movement is constrained in three dimensions.

8. A probe according to any of claims 1-7 wherein the  
15 defined rest position is a kinematically defined rest position.

9. An analogue probe for use in measuring apparatus comprising:

20 a housing;

a member movable with respect to the housing onto which a stylus may be mounted such that movement of the stylus results in movement of the member; wherein the member and the housing or a body connected to the  
25 housing are each provided with complementary location elements;

whereby one of the member and body may be biased or driven along one axis to a position where the member is held in a defined rest position with respect to the  
30 housing about at least two axes, said rest position being defined by the location elements.

10. An analogue probe according to claim 9 wherein a biasing means or driving means is used to bias or drive

the member or the body to a position where the member is held in the defined rest position, and whereby during movement of the member or the body, the biasing or driving means allows movement of the member relative to the housing in a direction perpendicular to said axis.

11. An analogue probe according to any of claims 9 or 10 wherein biasing means are provided to bias the member into the defined rest position and wherein the member is biased into the defined rest position when there is no stylus mounted on the member.

12. An analogue probe according to claim 11 wherein when a stylus is mounted on the member, the weight of the stylus holds the member away from the defined rest position.

13. An analogue probe according to any of claims 9 or 10 wherein driving means are provided to drive the member or body to a position where the member is held in the precisely defined rest position.

14. An analogue probe according to any of claims 9-13 wherein the defined rest position acts as a datum position.

15. An analogue probe according to any of claims 9-14 wherein the analogue probe is provided with transducers to measure the position of the member relative to the housing; wherein the transducer outputs are input into a digitising circuit; and wherein when the member is located in the defined rest position, counters in the digitising circuit are set to zero.

16. An analogue probe according to any of claims 9-15 wherein the probe includes a first transducer which measures the movement of the member relative to the housing and a second transducer which measures a property of the probe or the relationship between the probe and a surface adjacent the probe, whereby when the member is in the defined rest position the first transducer is locked and the second transducer is not locked.

17. A method of datuming an analogue probe for use in measuring apparatus, the analogue probe comprising a housing, a member movable with respect to the housing onto which a stylus may be mounted such that movement of the stylus results in movement of the member, and a transducer for measuring the position of the member relative to the housing, wherein the member and the housing or a body connected to the housing are each provided with complementary location elements, comprising the steps of:

    biasing or driving one of the member and the body to a position where the member is held in a defined rest position with respect to the housing;

    outputting the transducer readings to a digitising circuit and setting a digital counter of the digitising circuit to zero.